

On the Mean Places and Proper Motions for 1900 of 24 Southern Circumpolar Stars. By David Gill, C.B., F.R.S., Her Majesty's Astronomer at the Cape.

The following are the results of a discussion of all known accurate fundamental determinations of the places of the circumpolar stars which are employed for azimuth-determination at the Cape Observatory.

The Cordoba places are the only not strictly fundamental results which are included in the discussion.

The Cape places employed depend almost entirely upon azimuths which have been determined by observations of very close circumpolars at one or more successive transits both above and below pole. In some few cases the Cape azimuths depend on the upper transits of several very close circumpolars combined with the lower transits of others, but such determinations have only been regarded as fundamental when the places of the azimuth-determining stars can be derived from fundamental observations made near the same epoch.

The unpublished Cape results, 1861-65, have been included in the discussion.

The only systematic corrections which have been applied are those required on account of the various systems of clock-stars employed.

The reductions to 1900 were computed by the rigorous trigonometrical formulæ, and the final mean place and proper motion for each star depends upon a least square discussion.

The whole of the observations, and especially the right ascensions, are very accurately represented. Details of the discussion will be published as an appendix to the Cape General Catalogue for 1890.

Star.	Mag.	R.A. 1900 ^o h m s	P.M. in R.A. s	Dec. 1900 ^o °' "	P.M. in Dec. s
o Octantis	7.2	0 12 29.47	+0.006	-88 55 8.31	+0.001
Lacaille 634	5.6	1 43 7.85	+0.010	-85 16 29.14	+0.023
Lacaille 1029	7.5	2 35 29.87	-0.018	-86 9 41.49	+0.001
Lacaille 1848	8.4	3 3 53.06	-0.052	-88 34 20.81	-0.030
Lacaille 1707	6.8	4 34 28.67	-0.018	-83 6 55.25	+0.015
Lacaille 2296	6.3	5 49 33.61	-0.010	-84 50 6.33	+0.086
Lacaille 2512	6.8	6 6 9.50	-0.022	-85 55 52.85	+0.004
Lacaille 3274	6.3	7 22 1.23	-0.009	-86 52 11.38	+0.007
A Octantis	7.8	7 53 1.68	-0.028	-88 34 24.92	+0.010
ζ Octantis	5.5	9 11 14.16	-0.111	-85 15 46.81	+0.045
Lacaille 4510	6.9	10 36 55.09	-0.008	-85 34 21.32	-0.018
η Octantis	6.2	11 0 0.96	-0.056	-84 3 21.36	0.000
ι Octantis	5.4	12 44 26.89	+0.035	-84 34 48.60	+0.029
κ Octantis	5.7	13 24 42.05	-0.077	-85 16 24.74	-0.018
ζ Octantis	6.5	14 38 59.80	-0.186	-87 44 30.65	-0.061
φ Octantis	5.7	15 20 11.44	+0.081	-84 7 55.04	+0.082
Lacaille 6545	6.0	16 23 34.41	-0.004	-86 10 42.67	+0.014
χ Octantis	5.2	17 56 4.34	-0.114	-87 39 51.38	-0.124
σ Octantis	5.5	18 59 43.21	+0.085	-89 15 16.45	-0.005
Lacaille 8094	6.3	19 37 36.44	-0.008	-81 36 0.52	+0.007
Lacaille 8257	7.1	20 18 47.39	+0.027	-84 44 48.45	+0.030
B Octantis	6.6	21 37 38.51	-0.012	-89 19 3.12	-0.034
C Octantis	5.7	22 12 34.98	-0.043	-86 28 33.63	+0.070
τ Octantis	5.6	23 13 9.48	+0.018	-88 1 52.85	+0.010

Royal Observatory, Cape of Good Hope :
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New Double Stars found at the Cape Observatory in 1896.

(Communicated by D. Gill, C.B., LL.D., &c., H.M. Astronomer.)

The new double stars contained in the first of the two following lists have been found by Mr. R. T. A. Innes with the 7-inch equatorial of this observatory. They are numbered in continuation of his lists in the *Monthly Notices*, March 1895, vol. lv., and the *Journal of the B.A. Association*, April 1896, vol. vi. As the clock of the telescope is not sufficiently good for measuring, the angles and distances are estimated only. The second list contains stars found by the observers at the transit circle.

The magnitudes are taken from the different Cordoba determinations in nearly every case.

The mean date of observation may be taken as 1896.6.